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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,448	01/25/2002	Daniel Wang	669-77 CON	1290

7590 01/15/2003

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EXAMINER

WARREN, MATTHEW E

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 01/15/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,448

Applicant(s)

WANG, DANIEL

Examiner

Matthew E. Warren

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to the Amendment filed on October 30, 2002.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15, 16, 20, 22-24, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murdoch (US 4,002,282) in view of Kimura (US 5,396,104).

Murdoch shows (fig. 1) a method for packaging a high density integrated circuit having one semiconductor chip 20 disposed on a substrate (not shown) having a plurality of terminal pads (col. 2, lines 51-58) comprising forming a plurality of bonding pads 23, 24 in a plurality of rows and columns over a surface of the chip. Bond wires coated with an insulating material are provided (col. 3, lines 11-37). The method also includes connecting or attaching selected bonding pads on the chip with terminal pads on the substrate with the coated bond wires (col. 2, lines 56-59) and col. 3, lines 20-37). A plurality of semiconductor chips are disposed on the substrate and interconnections among selected bond pads on the chips are provided by insulated bond wires bonded to the selected bonding pads. The coated bond wires are attached onto the bonding pads by a ball shaped joint (col. 4, lines 23-26). Murdoch shows all of the elements of the claims except the method of providing pre-insulated bond wires. Kimura discloses a

method of forming a semiconductor package including providing pre-insulated bond wires. The method of forming the pre-insulated wires produce high quality insulated wires with a thin insulating coating and having a uniform thickness (col. 6, lines 39-44). The pre-insulated wires used in the semiconductors have excellent insulating and bonding properties making the semiconductors using the wires highly reliable and easily manufactured (col. 13, lines 42-53). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the bonding process of Murdoch by using pre-insulated bond wires as taught by Kimura to produce reliable semiconductor devices that are easy to manufacture.

Claims 17-19, 21, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murdoch (US 4,002,282) in view of Kimura (US 5,396,104) as applied to claim 15 and 24 above, and further in view of Zechman (US 5,656,830).

Murdoch and Kimura show all of the elements of the claims except the materials of the bond wires and bond pads. Zechman discloses (col. 2, lines 8-29) a semiconductor chip comprising conductive sites (bond pads) of aluminum and insulated aluminum wires. Neither reference specifically shows the size of the wires however it would have been an obvious matter of design choice to use 15 micron wires since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify integrated

package of Murdoch and Kimura by using aluminum for wires and bond pads of a chip as taught by Zechman because such materials are suitable for connection of an integrated circuit.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murdoch (US 4,002,282) in view of Kimura (US 5,396,104) as applied to claim 24 above, and further in view of Schneider et al. (US 5,610,442).

Murdoch and Kimura shows all of the elements of the claims except the encapsulation covering the chip which Schneider shows in figure 4. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Murdoch and Kimura with encapsulation as taught by Schneider to provide protection for the semiconductor chip.

Response to Arguments

Applicant's arguments with respect to claims 15-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

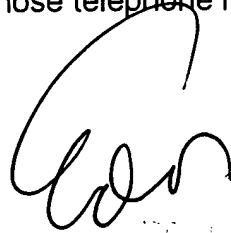
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (703) 305-0760. The examiner can normally be reached on Mon-Thurs, and alternating Fri, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

MEW

January 9, 2003



Matthew E. Warren
SUPERVISOR
TECHNICAL SERVICES